

JAPANESE

[JP,09-252360,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] The pocket mold data transmission unit characterized by the thing which it comes to warn to a user when not enough, in order that the dc-battery residue of a device required in order to transmit file capacity and a file to transmit beforehand may be checked and said dc-battery residue may transmit said file to transmit.

[Claim 2] The pocket mold data transmission unit characterized by coming to have the optional feature which can choose whether it transmits or not while it checks the dc-battery residue of a device required in order to transmit file capacity and a file to transmit beforehand, and emitting warning to a user, when said dc-battery residue is not enough in order to transmit said file to transmit.

[Claim 3] when transmitting multiple files, one file to transmit transmits -- ** -- the pocket mold data transmission unit which characterizes by coming to have the stop function which checks beforehand the dc-battery residue of a device required to transmit the capacity of said file to transmit, and this file, sends out a message when there is no dc-battery residue required in order to transmit said file to transmit to a degree, and suspends transmission of said file to transmit.

[Claim 4] When transmitting multiple files, whenever it transmits one file to transmit The dc-battery residue of a device required to transmit the capacity of said file to transmit and this file is checked beforehand. Next, send a message, when there is no dc-battery residue required to transmit said file to transmit, and while suspending transmission of said file to transmit The pocket mold data transmission unit characterized by coming to have the function to leave the information which the file name which transmission already ended among said files, and a non-transmitted file name understand.

[Claim 5] The pocket mold data transmission unit carry out [coming to have in the function which takes out warning, or emits warning and cannot choose in this file, when choose a file to transmit from multiple files and exceeding the capacity which said file to transmit can transmit from said dc-battery residue which checked the dc-battery residue of a device required to transmit the total capacity of said file to transmit, and this file, and checked, and] as the description.

[Claim 6] The dc-battery residue of a device required for a file to transmit beforehand is checked. During transmission of said file to transmit When it is judged that there is no dc-battery residue transmitted to the last, after performing file division processing The pocket mold data transmission unit characterized by terminating file transmission of divided one of the two, leaving the information which shows this thing [having divided], and coming to transmit the file for un-transmitting of said divided file after said dc-battery exchange or dc-battery charge.

[Claim 7] The pocket mold data transmission unit according to claim 6 characterized by searching the existence of file division information, transmitting the division file which is not transmitted [which was indicated by the file] when file division information exists, and coming to delete said file division information.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the pocket mold data transmission unit which drives with a dc-battery and has a file data transmission function.

[0002]

[Description of the Prior Art] The device which generally unified the cellular phone driven with a dc-battery and file data are recording equipment is shown and explained to drawing 9 .

[0003] The sound signal a inputted from the voice input circuit 91 is inputted into the sending-signal processing circuit 92. The output sound signal b of this digital disposal circuit 92 is inputted into the dialup circuit 93. The dialup circuit 93 performs an exchange of a sound signal with a message partner through the telephone line Tel. The sound signal c of the message partner who received in the dialup circuit 93 is inputted into the reception signal processing circuit 94. The output sound signal d of the reception signal processing circuit 94 is inputted into the voice output circuit 95.

[0004] The data file readout circuitry 96 reads the file data currently recorded from memory 97, and inputs it into the data transmission processing circuit 98. The output signal e of the data transmission processing circuit 98 is inputted into the dialup circuit 93.

[0005] The current supply circuit 99 performs current supply from a dc-battery 100 to each circuit. The dc-battery residue detector 101 detects the residue of a dc-battery 100, and supplies the result to a comparator circuit 102. Reference voltage Vref is compared and the current supply circuit 99 and the beep sound generating circuit 103 are controlled by the comparator circuit 102 based on the comparison result. The alarm signal f generated in the beep sound generating circuit 103 is inputted into the voice output circuit 95. The voice output circuit 95 drives Loudspeaker SP.

[0006] Thus, actuation of the constituted circuit is explained. Processing required in order to transmit by the telephone line Tel is performed in the sending-signal processing circuit 92 to a user's sound signal a inputted from the voice input circuit 91. This processed output sound signal b is transmitted to a message partner through the telephone line Tel from the dialup circuit 93.

[0007] On the contrary, the sound signal c processed for [which the message partner who received through the telephone line Tel in the dialup circuit 93 has sent] a message partner's transmission is inputted into the reception signal processing circuit 94, and it processes so that it can output as voice. This message partner's sound signal d can hear a partner's message, when the voice output circuit 95 drives Loudspeaker SP.

[0008] In transmitting a data file, the file read from the data file readout circuitry 96 to memory 97 is specified, and it reads file data. The read file data is inputted into the data transmission processing circuit 98, and processing required in order to transmit by the telephone line Tel is performed. This processed data signal e transmits to a message partner through the dialup circuit 93 and the telephone line Tel.

[0009] Residue detection of a dc-battery inputs into a comparator circuit 102 the detection result X detected in the dc-battery residue detector 101, and compares it with reference voltage

Vref. When it becomes the criteria residue 1<X< criteria residue 2, an alarm signal f outputs to the voice output circuit 95 from the beep sound generating circuit 103, and it tells a user that a dc-battery is lost without **** from Loudspeaker SP. And in the case of the X< criteria residue 1< criteria residue 2, a line connection is severed in the dialup circuit 93, and the current supply from the current supply circuit 99 to each circuit is stopped in it.

[0010] Since the fall of a dc-battery residue is told in advance to a user as more than explained, if it is the usual conversation, it will be immediately made an end, and it will be satisfactory if a message is terminated.

[0011] However, in under data transmission, a dc-battery should just have till data transmission termination, but it is in the middle of transmission, and when a dc-battery is lost, connection with the telephone line may be severed automatically, the transmitted contents of data may become imperfect, and the data which carried out the worst transmission may completely become useless. In this case, there is a problem that connection fees, time amount, etc. concerning data transmission become useless.

[0012]

[Problem(s) to be Solved by the Invention] In the above-mentioned system, while transmitting the file data, there was a possibility that the case where a dc-battery residue is lost and a file cannot be transmitted to the last might be generated, and there was a trouble that the time amount which transmission took till then, and communication link cost became useless.

[0013] When the residue of a dc-battery decreases, it performs data transmission, this invention is in the middle of transmission, and data transmission fails in it for a dc-battery piece, and it offers the pocket mold data transmission unit which does not make communication link cost etc. useless.

[0014]

[Means for Solving the Problem] The dc-battery residue of a device required in order to transmit file capacity and a file to transmit beforehand in the pocket mold data transmission unit of this invention in order to solve the above-mentioned technical problem is checked, and when said dc-battery residue is not enough in order to transmit said file to transmit, it is characterized by the thing which it comes to warn to a user.

[0015] Since file transmission is performed when this confirms whether a dc-battery has until it has transmitted the transmission file data when it is going to transmit file data and a dc-battery has, and it outputs the message of dc-battery exchange in not having, a fear of raising a dc-battery piece in the middle of transmission disappears.

[0016] Moreover, the dc-battery residue of a device required in order to transmit file capacity and a file to transmit beforehand is checked, and when said dc-battery residue is not enough in order to transmit said file to transmit, while emitting warning to a user, it is characterized by coming to have the optional feature which can choose whether it transmits or not.

[0017] When this confirms whether a dc-battery has until it has transmitted the transmission file data when it is going to transmit file data and a dc-battery has, file transmission is performed, but when it does not have, he can display the probability and you can leave [whether transmission is performed and or not] decision to a user.

[0018] moreover, when transmitting multiple files, one file to transmit transmits -- ** -- the dc-battery residue of a device required to transmit the capacity of said file to boil and transmit and this file checks beforehand, when there is no dc-battery residue required in order to transmit said file to transmit to a degree, a message sends out, and it carries out [coming to have the stop function which suspends transmission of said file to transmit, and] as the description.

[0019] Since file transmission is performed when it confirms whether a dc-battery has until it has transmitted the transmission file data, whenever it transmits each file when it is going to transmit two or more file data and a dc-battery has with this means, and the message of dc-battery exchange is outputted and it stops the next file transmission initiation in not having, it is lost in a fear of starting a dc-battery piece in a data file in the middle of transmission.

[0020] Moreover, when transmitting multiple files, whenever it transmits one file to transmit The dc-battery residue of a device required to transmit the capacity of said file to transmit and this file is checked beforehand. Next, send a message, when there is no dc-battery residue required

to transmit said file to transmit, and while suspending transmission of said file to transmit It is characterized by coming to have the function to leave the information which the file name which transmission already ended among said files, and a non-transmitted file name understand. Since there is no fear of a dc-battery being turned off in the middle of data transmission since it is going to transmit two or more file data, file transmission is stopped when the possibility of a dc-battery piece occurs before transmitting all the selected files, and a non-transmitted file name is recorded as information with this means, and also a non-transmitted data file name is known later, it can transmit anew after dc-battery exchange.

[0021] Furthermore, when choose a file to transmit from multiple files and exceeding the capacity which said file to transmit can transmit from said dc-battery residue which checked the dc-battery residue of a device required to transmit the total capacity of said file to transmit, and this file, and checked, it carries out [coming to have in the function which takes out warning, or emits warning and cannot choose in this file, and] as the description.

[0022] Since selection of the file name chosen at the end is canceled when it is going to transmit two or more file data, and file selection is performed with this means, it confirms whether a dc-battery has and a dc-battery does not have until it has transmitted all the selected files, a user can choose only the file which can be transmitted with the present dc-battery residue. Thereby, the selected file can be transmitted certainly, without raising a dc-battery piece the middle.

[0023] The dc-battery residue of a device required for a file to transmit beforehand further again is checked. When it is judged that there is no dc-battery residue transmitted to the last during transmission of said file to transmit, File transmission of one of the two divided after performing file division processing is terminated, and it leaves the information which shows this thing [having divided], and carries out [coming to transmit in the file for un-transmitting of said divided file after said dc-battery exchange or dc-battery charge, and] as the description.

[0024] Since file transmission is performed as it is when it confirms whether there is any dc-battery residue of whether to be able to transmit file data to the last and a dc-battery has with this means while transmitting file data, and file data is divided, data transmission is ended even on the way and it saves that division information in not having, it cannot be necessary to make useless the file data which was being transmitted till then with a dc-battery piece.

[0025]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention is explained to a detail, referring to a drawing. Drawing 1 is a block diagram for explaining the gestalt of implementation of the 1st of this invention. In drawing 1, from the microcomputer section 11, while specifying delivery and the data file to read for a control signal a to the data file storage section 12, record specification to the nonvolatile memory 121 of a control signal b is also performed.

[0026] From the data file storage section 12, the file data c specified by the control signal a is outputted to the data transmission processing section 13 as transmission data d through a microcomputer 11. In the data transmission processing section 13, the control signal e from a microcomputer 11 is received, it processes to the inputted transmission data d, and data are transmitted to the transmission other party.

[0027] The dc-battery residue detecting element 14 detects the residue of a dc-battery 15, and outputs the detection information f to a microcomputer 11. Message signal g is outputted to the message output section 16 based on the residue detection information f, and also the data file storage section 12 and the data transmission processing section 13 are controlled by the microcomputer 11 with a control signal a and a control signal e.

[0028] It explains in more detail about actuation of drawing 1, using the flow chart of drawing 2.

[0029] First, I have the data file transmitted from a user with a microcomputer 11 chosen. With a microcomputer 11, in order to investigate the capacity of the selected file, a control signal a is outputted to the data file storage section 12. In the data file storage section 12, it outputs to a microcomputer 11 by using the capacity data of the selected file to transmit as file data c. With a microcomputer 11, time amount required to finish transmitting a file is computed from this file

capacity data and the file transmission speed in the data transmission processing section 13. The dc-battery residue detecting element 14 detects the dc-battery residue of a dc-battery 15, and outputs the detection information f to a microcomputer 11. With a microcomputer 11, a judgment about whether a dc-battery 15 has is made between the file transmission need time amount computed with the residue of the dc-battery residue detecting element 14.

[0030] When it is judged that a dc-battery 15 has till a file end of transmission, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data.

[0031] On the contrary, when it is judged that it does not have till a file end of transmission, a microcomputer 11 outputs message signal g of contents it says to the message output section 16, "Transmit after exchanging and charging a dc-battery since there are few dc-battery residues."

[0032] Since file transmission is performed when it confirms whether the capacity of a dc-battery has and a dc-battery has, and it outputs the message of dc-battery exchange in not having until it ends transmission of transmission file data with the gestalt of this operation, when it is going to transmit file data, a fear of raising a dc-battery piece in the middle of transmission disappears.

[0033] Next, the gestalt of implementation of the 2nd of this invention is explained using the flow chart of drawing 1 and drawing 3. It is the same to decision of the flow chart of the gestalt of this operation, and the flow chart of drawing 2 of "whether to have a dc-battery during transmission", and explanation here is omitted. Moreover, in decision with a microcomputer, the probability of possibility that a dc-battery residue has from transmission need time amount and a dc-battery residue to an end of transmission is taken out. For example, when it is delicate whether it has or not, it twists 50% that it is likely to have absolutely, and is made into 5 etc.% etc. at the time.

[0034] When it is judged that a dc-battery certainly has till a file end of transmission, it is the same as that of the gestalt of the 1st operation, and transmission of file data is started.

[0035] When it is judged that it does not have till a file end of transmission, since the message output section 16 has few "dc-battery residues, a microcomputer 11 may raise a dc-battery piece on the way. It is in the middle of transmission, and possibility of raising a dc-battery piece is **%. Is transmission started? He outputs message signal g of contents, such as "", and leaves [whether it transmits and or not] it to decision of a user. When the user wanted to start transmission and it chooses, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d. On the contrary, when are not transmitted and it chooses, it ends as it is.

[0036] Thus, with the gestalt of this operation, when it confirms whether a dc-battery has until it has transmitted the transmission file data when it is going to transmit file data and a dc-battery has, file transmission is performed, but when it does not have, he can display that probability and you can leave [whether transmission is performed and or not] decision to a user.

[0037] The gestalt of implementation of the 3rd of this invention is explained using the flow chart of drawing 1 and drawing 4.

[0038] First, all the data files transmitted from a user with a microcomputer 11 are chosen. With a microcomputer 11, in order to investigate the capacity of the file which starts transmission first, a control signal a is outputted to the data file storage section 12. In the data file storage section 12, it outputs to the microcomputer section 11 by using the capacity data of the selected file to transmit as file data c. With a microcomputer 11, a file is transmitted from this file capacity data and the file transmission speed in the data transmission processing section 13, and time amount required to finish is computed. The dc-battery residue detecting element 14 detects the dc-battery residue of a dc-battery 15, and outputs the residue information f to a microcomputer 11. With a microcomputer 11, it judges about whether a dc-battery 15 has

between the file transmission need time amount computed with the residue of the dc-battery residue information f.

[0039] When it is judged that a dc-battery 15 has till a file end of transmission, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d.

[0040] The capacity of the file which starts transmission next similarly is investigated after ending the first data file transmission, the residue of a dc-battery 15 is checked, and file transmission will be started if it judges that a dc-battery 15 has. It carries out until it transmits all the files that chose the above-mentioned cycle.

[0041] When it is judged the middle that a dc-battery does not have till a file end of transmission, since the message output section 16 has few "dc-battery residues, a microcomputer 11 stops transmission of ***, +++, and OOO among the selected files. Message signal g of contents like transmit after exchanging and charging a dc-battery" is outputted, and it ends.

[0042] Thus, since file transmission is performed when it confirms whether a dc-battery has until it has transmitted the transmission file data, whenever it transmits each file when it is going to transmit two or more file data and a dc-battery has, and the message of dc-battery exchange is outputted and it stops the next file transmission initiation in not having, it is lost in a fear of starting a dc-battery piece in a data file in the middle of transmission.

[0043] The gestalt of implementation of the 4th of this invention is explained using the flow chart of drawing 1 and drawing 5. The flow chart of drawing 5 of the gestalt of this operation is the same to processing of the flow chart of drawing 4 of "displaying the file name which is not transmitted", and explains subsequent processings here.

[0044] A microcomputer 11 outputs the file name which is not transmitted to the message output section 16. Next, it outputs so that this file name that is not transmitted may be recorded on the data file storage section 12 as a control signal b. After performing dc-battery exchange, the remaining data files are transmitted based on the control signal recorded on this data file storage section 12.

[0045] Since there is no fear of a dc-battery being turned off in the middle of data transmission since it is going to transmit two or more file data, file transmission is stopped with the gestalt of this operation when the possibility of a dc-battery piece occurs before transmitting all the selected files, and a non-transmitted file name is recorded as information, and also a non-transmitted data file name is known later, it can transmit anew after dc-battery exchange.

[0046] Next, the gestalt of implementation of the 5th of this invention is explained with the flow chart of drawing 1 and drawing 6.

[0047] First, the dc-battery residue detecting element 14 detects a dc-battery 15 dc-battery residue, and outputs the residue information f to a microcomputer 11. With a microcomputer 11, the maximum file capacity which can be transmitted is computed from the residue information f on this dc-battery 15, and the file transmission speed in the data transmission processing section 13. The file name which I had choose the data file transmitted from a user in the microcomputer section 11, and was chosen as the transmission file list is added.

[0048] Next, with a microcomputer 11, in order to investigate the capacity of the total file of the created transmission file list, a control signal a is outputted to the data file storage section 12. In the data file storage section 12, it outputs to a microcomputer 11 by using the full capacity data of the selected file to transmit as file data c. I have a user choose the data file which a degree transmits, and the above-mentioned contents are repeated till the file end of selection noting that the file data c which expresses the full capacity data of the computed maximum file capacity which can be transmitted, and the file to transmit with a microcomputer 11 is compared, and it has a dc-battery during transmission, when the maximum file capacity which can be transmitted is larger.

[0049] When the full capacity of the file to transmit is larger, it judges that it does not have a dc-battery until it transmits all selected file data, and a microcomputer 11 outputs message

signal g of contents like "since there are few dc-battery residues, the selected file cannot be transmitted now" to the message output section 16, and is completed. And the file name chosen at the end is deleted from a transmission file list.

[0050] After the file end of selection, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 one by one according to a transmission file list while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d.

[0051] Thus, since selection of the file name chosen at the end is canceled when it is going to transmit two or more file data, and file selection is performed, it confirms whether a dc-battery has and a dc-battery does not have until it has transmitted all the selected files, a user can choose only the file which can be transmitted with the present dc-battery residue. Thereby, the selected file can be transmitted certainly, without raising a dc-battery piece the middle.

[0052] Next, the gestalt of implementation of the 6th of this invention is explained with the flow chart of drawing 1 and drawing 7.

[0053] The data file transmitted from a user with a microcomputer 11 is chosen. A microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d.

[0054] The dc-battery residue detecting element 14 detects the dc-battery residue of a dc-battery 15, and outputs it to a microcomputer 11 as residue information f. With a microcomputer 11, the maximum file capacity which can be transmitted from this dc-battery residue information f and the file transmission speed in the data transmission processing section 13 is computed.

[0055] With a microcomputer 11, the non-transmission capacity of the file under transmission is investigated, and the maximum file capacity and the non-transmission capacity which were computed are measured. As a result of a comparison, when the maximum file capacity is larger, it judges that it has a dc-battery during file transmission, and transmission is continued.

[0056] On the contrary, when the non-transmitted file capacity is larger, it judges that the file data under transmission cannot transmit to the last, and is made to terminate file transmission in the part which performed file division and was divided in the part of non-transmitted data. Next, a microcomputer 11 records this division information on the nonvolatile memory 121 of the data file storage section 12.

[0057] Since file transmission is performed as it is when it confirms whether there is any dc-battery residue of whether to be able to transmit file data to the last and a dc-battery has while transmitting file data as explained above, and file data is divided, data transmission is ended even on the way and it saves the division information in not having, it cannot be necessary to make useless the file data which was being transmitted till then with a dc-battery piece.

[0058] Furthermore, the gestalt of implementation of the 7th of this invention is explained using the flow chart of drawing 1 and drawing 8.

[0059] Immediately after powering on, a microcomputer 11 searches whether division information is recorded to the data file storage section 12. Consequently, when division information is recorded, in order to ask whether the divided remaining file data is transmitted to a user, "division file is in the message output means 211. Does it transmit? Message signal g of contents, such as ", is outputted. When a user chooses transmission ****, a microcomputer 11 reads division information from the data file storage section 12, according to the information, specifies the file to transmit and performs transmission from the divided data. Information required in order to return the data file divided into the other party to one of the bases is transmitted after the end of transmission of data, and the division information currently finally recorded on the data file storage section 12 is deleted.

[0060] With the gestalt of this operation, while being able to transmit the divided remaining data automatically, division information currently recorded on the data file storage section 12 can be deleted.

[0061] By this invention, as explained above, when transmitting a file, by performing the residue

check of a dc-battery beforehand, it is in the middle of file data transmission, a dc-battery-piece is raised, and the connection fees concerning the data which were being transmitted till then or transmission and making time amount useless are lost.

[0062]

[Effect of the Invention] Since it transmits when it is judged that there is a dc-battery of the part which performs a dc-battery residue check and can transmit data file capacity when performing file transmission according to this invention as explained above, data transmission can prevent failure in the middle of data transmission for a dc-battery piece.

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TECHNICAL FIELD

[Field of the Invention] This invention relates to the pocket mold data transmission unit which drives with a dc-battery and has a file data transmission function.

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PRIOR ART

[Description of the Prior Art] The device which generally unified the cellular phone driven with a dc-battery and file data are recording equipment is shown and explained to drawing 9.

[0003] The sound signal a inputted from the voice input circuit 91 is inputted into the sending-signal processing circuit 92. The output sound signal b of this digital disposal circuit 92 is inputted into the dialup circuit 93. The dialup circuit 93 performs an exchange of a sound signal with a message partner through the telephone line Tel. The sound signal c of the message partner who received in the dialup circuit 93 is inputted into the reception signal processing circuit 94. The output sound signal d of the reception signal processing circuit 94 is inputted into the voice output circuit 95.

[0004] The data file readout circuitry 96 reads the file data currently recorded from memory 97, and inputs it into the data transmission processing circuit 98. The output signal e of the data transmission processing circuit 98 is inputted into the dialup circuit 93.

[0005] The current supply circuit 99 performs current supply from a dc-battery 100 to each circuit. The dc-battery residue detector 101 detects the residue of a dc-battery 100, and supplies the result to a comparator circuit 102. Reference voltage Vref is compared and the current supply circuit 99 and the beep sound generating circuit 103 are controlled by the comparator circuit 102 based on the comparison result. The alarm signal f generated in the beep sound generating circuit 103 is inputted into the voice output circuit 95. The voice output circuit 95 drives Loudspeaker SP.

[0006] Thus, actuation of the constituted circuit is explained. Processing required in order to transmit by the telephone line Tel is performed in the sending-signal processing circuit 92 to a user's sound signal a inputted from the voice input circuit 91. This processed output sound signal b is transmitted to a message partner through the telephone line Tel from the dialup circuit 93.

[0007] On the contrary, the sound signal c processed for [which the message partner who received through the telephone line Tel in the dialup circuit 93 has sent] a message partner's transmission is inputted into the reception signal processing circuit 94, and it processes so that it can output as voice. This message partner's sound signal d can hear a partner's message, when the voice output circuit 95 drives Loudspeaker SP.

[0008] In transmitting a data file, the file read from the data file readout circuitry 96 to memory 97 is specified, and it reads file data. The read file data is inputted into the data transmission processing circuit 98, and processing required in order to transmit by the telephone line Tel is performed. This processed data signal e transmits to a message partner through the dialup circuit 93 and the telephone line Tel.

[0009] Residue detection of a dc-battery inputs into a comparator circuit 102 the detection result X detected in the dc-battery residue detector 101, and compares it with reference voltage Vref. When it becomes the criteria residue $1 < X < \text{criteria residue } 2$, an alarm signal f outputs to the voice output circuit 95 from the beep sound generating circuit 103, and it tells a user that a dc-battery is lost without **** from Loudspeaker SP. And in the case of the $X < \text{criteria residue } 1 < \text{criteria residue } 2$, a line connection is severed in the dialup circuit 93, and the current supply from the current supply circuit 99 to each circuit is stopped in it.

[0010] Since the fall of a dc-battery residue is told in advance to a user as more than explained, if it is the usual conversation, it will be immediately made an end, and it will be satisfactory if a message is terminated.

[0011] However, in under data transmission, a dc-battery should just have till data transmission termination, but it is in the middle of transmission, and when a dc-battery is lost, connection with the telephone line may be severed automatically, the transmitted contents of data may become imperfect, and the data which carried out the worst transmission may completely become useless. In this case, there is a problem that connection fees, time amount, etc. concerning data transmission become useless.

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EFFECT OF THE INVENTION

[Effect of the Invention] Since it transmits when it is judged that there is a dc-battery of the part which performs a dc-battery residue check and can transmit data file capacity when performing file transmission according to this invention as explained above, data transmission can prevent failure in the middle of data transmission for a dc-battery piece.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] In the above-mentioned system, while transmitting the file data, there was a possibility that the case where a dc-battery residue is lost and a file cannot be transmitted to the last might be generated, and there was a trouble that the time amount which transmission took till then, and communication link cost became useless.

[0013] When the residue of a dc-battery decreases, it performs data transmission, this invention is in the middle of transmission, and data transmission fails in it for a dc-battery piece, and it offers the pocket mold data transmission unit which does not make communication link cost etc. useless.

[Translation done.]

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MEANS

[Means for Solving the Problem] The dc-battery residue of a device required in order to transmit file capacity and a file to transmit beforehand in the pocket mold data transmission unit of this invention in order to solve the above-mentioned technical problem is checked, and when said dc-battery residue is not enough in order to transmit said file to transmit, it is characterized by the thing which it comes to warn to a user.

[0015] Since file transmission is performed when this confirms whether a dc-battery has until it has transmitted the transmission file data when it is going to transmit file data and a dc-battery has, and it outputs the message of dc-battery exchange in not having, a fear of raising a dc-battery piece in the middle of transmission disappears.

[0016] Moreover, the dc-battery residue of a device required in order to transmit file capacity and a file to transmit beforehand is checked, and when said dc-battery residue is not enough in order to transmit said file to transmit, while emitting warning to a user, it is characterized by coming to have the optional feature which can choose whether it transmits or not.

[0017] When this confirms whether a dc-battery has until it has transmitted the transmission file data when it is going to transmit file data and a dc-battery has, file transmission is performed, but when it does not have, he can display the probability and you can leave [whether transmission is performed and or not] decision to a user.

[0018] moreover, when transmitting multiple files, one file to transmit transmits -- ** -- the dc-battery residue of a device required to transmit the capacity of said file to boil and transmit and this file checks beforehand, when there is no dc-battery residue required in order to transmit said file to transmit to a degree, a message sends out, and it carries out [coming to have the stop function which suspends transmission of said file to transmit, and] as the description.

[0019] Since file transmission is performed when it confirms whether a dc-battery has until it has transmitted the transmission file data, whenever it transmits each file when it is going to transmit two or more file data and a dc-battery has with this means, and the message of dc-battery exchange is outputted and it stops the next file transmission initiation in not having, it is lost in a fear of starting a dc-battery piece in a data file in the middle of transmission.

[0020] Moreover, when transmitting multiple files, whenever it transmits one file to transmit The dc-battery residue of a device required to transmit the capacity of said file to transmit and this file is checked beforehand. Next, send a message, when there is no dc-battery residue required to transmit said file to transmit, and while suspending transmission of said file to transmit It is characterized by coming to have the function to leave the information which the file name which transmission already ended among said files, and a non-transmitted file name understand. Since there is no fear of a dc-battery being turned off in the middle of data transmission since it is going to transmit two or more file data, file transmission is stopped when the possibility of a dc-battery piece occurs before transmitting all the selected files, and a non-transmitted file name is recorded as information with this means, and also a non-transmitted data file name is known later, it can transmit anew after dc-battery exchange.

[0021] Furthermore, when choose a file to transmit from multiple files and exceeding the capacity which said file to transmit can transmit from said dc-battery residue which checked the dc-battery residue of a device required to transmit the total capacity of said file to transmit, and

this file, and checked, it carries out [coming to have in the function which takes out warning, or emits warning and cannot choose in this file, and] as the description.

[0022] Since selection of the file name chosen at the end is canceled when it is going to transmit two or more file data, and file selection is performed with this means, it confirms whether a dc-battery has and a dc-battery does not have until it has transmitted all the selected files, a user can choose only the file which can be transmitted with the present dc-battery residue. Thereby, the selected file can be transmitted certainly, without raising a dc-battery piece the middle.

[0023] The dc-battery residue of a device required for a file to transmit beforehand further again is checked. When it is judged that there is no dc-battery residue transmitted to the last during transmission of said file to transmit, File transmission of one of the two divided after performing file division processing is terminated, and it leaves the information which shows this thing [having divided], and carries out [coming to transmit in the file for un-transmitting of said divided file after said dc-battery exchange or dc-battery charge, and] as the description.

[0024] Since file transmission is performed as it is when it confirms whether there is any dc-battery residue of whether to be able to transmit file data to the last and a dc-battery has with this means while transmitting file data, and file data is divided, data transmission is ended even on the way and it saves that division information in not having, it cannot be necessary to make useless the file data which was being transmitted till then with a dc-battery piece.

[0025]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention is explained to a detail, referring to a drawing. Drawing 1 is a block diagram for explaining the gestalt of implementation of the 1st of this invention. In drawing 1 , from the microcomputer section 11, while specifying delivery and the data file to read for a control signal a to the data file storage section 12, record specification to the nonvolatile memory 121 of a control signal b is also performed.

[0026] From the data file storage section 12, the file data c specified by the control signal a is outputted to the data transmission processing section 13 as transmission data d through a microcomputer 11. In the data transmission processing section 13, the control signal e from a microcomputer 11 is received, it processes to the inputted transmission data d, and data are transmitted to the transmission other party.

[0027] The dc-battery residue detecting element 14 detects the residue of a dc-battery 15, and outputs the detection information f to a microcomputer 11. Message signal g is outputted to the message output section 16 based on the residue detection information f, and also the data file storage section 12 and the data transmission processing section 13 are controlled by the microcomputer 11 with a control signal a and a control signal e.

[0028] It explains in more detail about actuation of drawing 1 , using the flow chart of drawing 2 .

[0029] First, I have the data file transmitted from a user with a microcomputer 11 chosen. With a microcomputer 11, in order to investigate the capacity of the selected file, a control signal a is outputted to the data file storage section 12. In the data file storage section 12, it outputs to a microcomputer 11 by using the capacity data of the selected file to transmit as file data c. With a microcomputer 11, time amount required to finish transmitting a file is computed from this file capacity data and the file transmission speed in the data transmission processing section 13. The dc-battery residue detecting element 14 detects the dc-battery residue of a dc-battery 15, and outputs the detection information f to a microcomputer 11. With a microcomputer 11, a judgment about whether a dc-battery 15 has is made between the file transmission need time amount computed with the residue of the dc-battery residue detecting element 14.

[0030] When it is judged that a dc-battery 15 has till a file end of transmission, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data.

[0031] On the contrary, when it is judged that it does not have till a file end of transmission, a

microcomputer 11 outputs message signal g of contents it says to the message output section 16, "Transmit after exchanging and charging a dc-battery since there are few dc-battery residues."

[0032] Since file transmission is performed when it confirms whether the capacity of a dc-battery has and a dc-battery has, and it outputs the message of dc-battery exchange in not having until it ends transmission of transmission file data with the gestalt of this operation, when it is going to transmit file data, a fear of raising a dc-battery piece in the middle of transmission disappears.

[0033] Next, the gestalt of implementation of the 2nd of this invention is explained using the flow chart of drawing 1 and drawing 3. It is the same to decision of the flow chart of the gestalt of this operation, and the flow chart of drawing 2 of "whether to have a dc-battery during transmission", and explanation here is omitted. Moreover, in decision with a microcomputer, the probability of possibility that a dc-battery residue has from transmission need time amount and a dc-battery residue to an end of transmission is taken out. For example, when it is delicate whether it has or not, it twists 50% that it is likely to have absolutely, and is made into 5 etc.% etc. at the time.

[0034] When it is judged that a dc-battery certainly has till a file end of transmission, it is the same as that of the gestalt of the 1st operation, and transmission of file data is started.

[0035] When it is judged that it does not have till a file end of transmission, since the message output section 16 has few "dc-battery residues, a microcomputer 11 may raise a dc-battery piece on the way. It is in the middle of transmission, and possibility of raising a dc-battery piece is **%. Is transmission started? He outputs message signal g of contents, such as "", and leaves [whether it transmits and or not] it to decision of a user. When the user wanted to start transmission and it chooses, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d. On the contrary, when are not transmitted and it chooses, it ends as it is.

[0036] Thus, with the gestalt of this operation, when it confirms whether a dc-battery has until it has transmitted the transmission file data when it is going to transmit file data and a dc-battery has, file transmission is performed, but when it does not have, he can display that probability and you can leave [whether transmission is performed and or not] decision to a user.

[0037] The gestalt of implementation of the 3rd of this invention is explained using the flow chart of drawing 1 and drawing 4.

[0038] First, all the data files transmitted from a user with a microcomputer 11 are chosen. With a microcomputer 11, in order to investigate the capacity of the file which starts transmission first, a control signal a is outputted to the data file storage section 12. In the data file storage section 12, it outputs to the microcomputer section 11 by using the capacity data of the selected file to transmit as file data c. With a microcomputer 11, a file is transmitted from this file capacity data and the file transmission speed in the data transmission processing section 13, and time amount required to finish is computed. The dc-battery residue detecting element 14 detects the dc-battery residue of a dc-battery 15, and outputs the residue information f to a microcomputer 11. With a microcomputer 11, it judges about whether a dc-battery 15 has between the file transmission need time amount computed with the residue of the dc-battery residue information f.

[0039] When it is judged that a dc-battery 15 has till a file end of transmission, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d.

[0040] The capacity of the file which starts transmission next similarly is investigated after ending the first data file transmission, the residue of a dc-battery 15 is checked, and file transmission will be started if it judges that a dc-battery 15 has. It carries out until it transmits all the files that chose the above-mentioned cycle.

[0041] When it is judged the middle that a dc-battery does not have till a file end of transmission, since the message output section 16 has few "dc-battery residues, a microcomputer 11 stops transmission of ***, +++, and OOO among the selected files. Message signal g of contents like transmit after exchanging and charging a dc-battery" is outputted, and it ends.

[0042] Thus, since file transmission is performed when it confirms whether a dc-battery has until it has transmitted the transmission file data, whenever it transmits each file when it is going to transmit two or more file data and a dc-battery has, and the message of dc-battery exchange is outputted and it stops the next file transmission initiation in not having, it is lost in a fear of starting a dc-battery piece in a data file in the middle of transmission.

[0043] The gestalt of implementation of the 4th of this invention is explained using the flow chart of drawing 1 and drawing 5. The flow chart of drawing 5 of the gestalt of this operation is the same to processing of the flow chart of drawing 4 of "displaying the file name which is not transmitted", and explains subsequent processings here.

[0044] A microcomputer 11 outputs the file name which is not transmitted to the message output section 16. Next, it outputs so that this file name that is not transmitted may be recorded on the data file storage section 12 as a control signal b. After performing dc-battery exchange, the remaining data files are transmitted based on the control signal recorded on this data file storage section 12.

[0045] Since there is no fear of a dc-battery being turned off in the middle of data transmission since it is going to transmit two or more file data, file transmission is stopped with the gestalt of this operation when the possibility of a dc-battery piece occurs before transmitting all the selected files, and a non-transmitted file name is recorded as information, and also a non-transmitted data file name is known later, it can transmit anew after dc-battery exchange.

[0046] Next, the gestalt of implementation of the 5th of this invention is explained with the flow chart of drawing 1 and drawing 6.

[0047] First, the dc-battery residue detecting element 14 detects a dc-battery 15 dc-battery residue, and outputs the residue information f to a microcomputer 11. With a microcomputer 11, the maximum file capacity which can be transmitted is computed from the residue information f on this dc-battery 15, and the file transmission speed in the data transmission processing section 13. The file name which I had choose the data file transmitted from a user in the microcomputer section 11, and was chosen as the transmission file list is added.

[0048] Next, with a microcomputer 11, in order to investigate the capacity of the total file of the created transmission file list, a control signal a is outputted to the data file storage section 12. In the data file storage section 12, it outputs to a microcomputer 11 by using the full capacity data of the selected file to transmit as file data c. I have a user choose the data file which a degree transmits, and the above-mentioned contents are repeated till the file end of selection noting that the file data c which expresses the full capacity data of the computed maximum file capacity which can be transmitted, and the file to transmit with a microcomputer 11 is compared, and it has a dc-battery during transmission, when the maximum file capacity which can be transmitted is larger.

[0049] When the full capacity of the file to transmit is larger, it judges that it does not have a dc-battery until it transmits all selected file data, and a microcomputer 11 outputs message signal g of contents like "since there are few dc-battery residues, the selected file cannot be transmitted now" to the message output section 16, and is completed. And the file name chosen at the end is deleted from a transmission file list.

[0050] After the file end of selection, a microcomputer 11 outputs read-out directions of file data to the data file storage section 12 one by one according to a transmission file list while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d.

[0051] Thus, since selection of the file name chosen at the end is canceled when it is going to transmit two or more file data, and file selection is performed, it confirms whether a dc-battery has and a dc-battery does not have until it has transmitted all the selected files, a user can

choose only the file which can be transmitted with the present dc-battery residue. Thereby, the selected file can be transmitted certainly, without raising a dc-battery piece the middle.

[0052] Next, the gestalt of implementation of the 6th of this invention is explained with the flow chart of drawing 1 and drawing 7.

[0053] The data file transmitted from a user with a microcomputer 11 is chosen. A microcomputer 11 outputs read-out directions of file data to the data file storage section 12 while directing transmission initiation in the data transmission processing section 13 with a control signal e. The file data c read from the data file storage section 12 is outputted to the data transmission processing section 13 as transmission data d.

[0054] The dc-battery residue detecting element 14 detects the dc-battery residue of a dc-battery 15, and outputs it to a microcomputer 11 as residue information f. With a microcomputer 11, the maximum file capacity which can be transmitted from this dc-battery residue information f and the file transmission speed in the data transmission processing section 13 is computed.

[0055] With a microcomputer 11, the non-transmission capacity of the file under transmission is investigated, and the maximum file capacity and the non-transmission capacity which were computed are measured. As a result of a comparison, when the maximum file capacity is larger, it judges that it has a dc-battery during file transmission, and transmission is continued.

[0056] On the contrary, when the non-transmitted file capacity is larger, it judges that the file data under transmission cannot transmit to the last, and is made to terminate file transmission in the part which performed file division and was divided in the part of non-transmitted data. Next, a microcomputer 11 records this division information on the nonvolatile memory 121 of the data file storage section 12.

[0057] Since file transmission is performed as it is when it confirms whether there is any dc-battery residue of whether to be able to transmit file data to the last and a dc-battery has while transmitting file data as explained above, and file data is divided, data transmission is ended even on the way and it saves the division information in not having, it cannot be necessary to make useless the file data which was being transmitted till then with a dc-battery piece.

[0058] Furthermore, the gestalt of implementation of the 7th of this invention is explained using the flow chart of drawing 1 and drawing 8.

[0059] Immediately after powering on, a microcomputer 11 searches whether division information is recorded to the data file storage section 12. Consequently, when division information is recorded, in order to ask whether the divided remaining file data is transmitted to a user, "division file is in the message output means 211. Does it transmit? Message signal g of contents, such as ", is outputted. When a user chooses transmission ****, a microcomputer 11 reads division information from the data file storage section 12, according to the information, specifies the file to transmit and performs transmission from the divided data. Information required in order to return the data file divided into the other party to one of the bases is transmitted after the end of transmission of data, and the division information currently finally recorded on the data file storage section 12 is deleted.

[0060] With the gestalt of this operation, while being able to transmit the divided remaining data automatically, division information currently recorded on the data file storage section 12 can be deleted.

[0061] By this invention, as explained above, when transmitting a file, by performing the residue check of a dc-battery beforehand, it is in the middle of file data transmission, a dc-battery piece is raised, and the connection fees concerning the data which were being transmitted till then or transmission and making time amount useless are lost.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The block diagram for explaining the gestalt of implementation of the 1st of this invention.

[Drawing 2] The flow chart for explaining actuation of drawing 1 .

[Drawing 3] The flow chart for explaining the gestalt of implementation of the 2nd of this invention.

[Drawing 4] The flow chart for explaining the gestalt of implementation of the 3rd of this invention.

[Drawing 5] The flow chart for explaining the gestalt of implementation of the 4th of this invention.

[Drawing 6] The flow chart for explaining the gestalt of implementation of the 5th of this invention.

[Drawing 7] The flow chart for explaining the gestalt of implementation of the 6th of this invention.

[Drawing 8] The flow chart for explaining the gestalt of implementation of the 7th of this invention.

[Drawing 9] The block diagram for explaining the system which unified the cellular phone driven with the conventional dc-battery, and file data are recording equipment.

[Description of Notations]

11 [-- The data transmission processing section 14 / -- A dc-battery residue detecting element, 15 / -- A dc-battery, 16 / -- Message output section.] -- A microcomputer, 12 -- The data file storage section, 121 -- Nonvolatile memory, 13

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(71) 出願人 000003078

株式会社東芝

神奈川県川崎市幸区堀川町72番地

(72) 発明者 伊藤 謙

神奈川県横浜市磯子区新杉田町8番地 株

式会社東芝マルチメディア技術研究所内

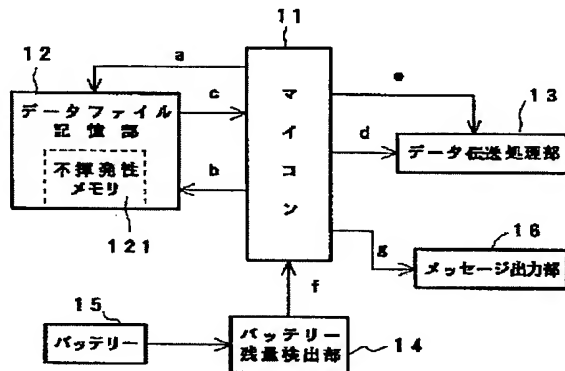
(74) 代理人 弁理士 須山 佐一

(54) 【発明の名称】 携帯型データ伝送装置

(57) 【要約】

【課題】 バッテリー切れのためデータ伝送の失敗を防止した携帯型データ伝送装置を提供する。

【解決手段】 ファイルデータを伝送しようとした場合に、伝送ファイルデータを伝送しきるまで、バッテリー15が持つかどうかをバッテリー残量検出部14がチェックし、マイコン11は、バッテリー15が残量がある場合にはファイル伝送を行い、ない場合にはバッテリー15の交換のメッセージを出力するように制御することにより、データ伝送の途中にバッテリー切れによるデータ伝送の失敗を防止することができる。



【特許請求の範囲】

【請求項 1】 予め伝送したいファイル容量とファイルを伝送するために必要な機器のバッテリー残量を確認し、

前記バッテリー残量が、前記伝送したいファイルを伝送するために充分でない場合、使用者に警告してなることを特徴とする携帯型データ伝送装置。

【請求項 2】 予め伝送したいファイル容量とファイルを伝送するために必要な機器のバッテリー残量を確認し、

前記バッテリー残量が、伝送したい前記ファイルを伝送するために充分でない場合、使用者に警告を発するとともに、伝送するかどうかを選択できる選択機能を備えてなることを特徴とする携帯型データ伝送装置。

【請求項 3】 複数のファイルを送信するときに、伝送したいファイルを 1 つ伝送するごとに、

伝送したい前記ファイルの容量と該ファイルを伝送するのに必要な機器のバッテリー残量を予め確認し、次に伝送したい前記ファイルを伝送するために必要なバッテリー残量がない場合はメッセージを送出し、前記伝送したいファイルの伝送を停止する停止機能を備えてなることを特徴とする携帯型データ伝送装置。

【請求項 4】 複数のファイルを送信するときに、伝送したいファイルを 1 つ伝送するごとに、

伝送したい前記ファイルの容量と該ファイルを伝送するのに必要な機器のバッテリー残量を予め確認し、次に伝送したい前記ファイルを伝送するのに必要なバッテリー残量がない場合はメッセージを出し、伝送したい前記ファイルの伝送を停止するとともに、前記ファイルのうち、既に伝送が終了したファイル名と未送信のファイル名がわかる情報を残す機能を備えてなることを特徴とする携帯型データ伝送装置。

【請求項 5】 複数のファイルより伝送したいファイルを選択するときに、前記伝送したいファイルのトータル容量と該ファイルを伝送するのに必要な機器のバッテリー残量を確認し、

確認した前記バッテリー残量から、前記伝送したいファイルが伝送可能な容量を超える場合、警告を出すかまたは、警告を発して該ファイルが選択できない機能を備えてなることを特徴とする携帯型データ伝送装置。

【請求項 6】 予め伝送したいファイルに必要な機器のバッテリー残量を確認し、

前記伝送したいファイルの伝送中に、最後まで伝送するだけのバッテリー残量がないと判断した場合、ファイル分割処理を行ってから、分割された片方のファイル伝送を終了させ、この分割したことを示す情報を残し、前記バッテリー交換後またはバッテリー充電後に、前記分割されたファイルの未伝送分のファイルを伝送してなることを特徴とする携帯型データ伝送装置。

【請求項 7】 ファイル分割情報の有無を検索し、フ

イル分割情報が存在する場合にそのファイルに記載された未送信の分割ファイルを伝送し、前記ファイル分割情報を削除してなることを特徴とする請求項 6 記載の携帯型データ伝送装置。

【発明の詳細な説明】**【0001】**

【発明の属する技術分野】 この発明は、バッテリーで駆動しファイルデータ伝送機能を有する携帯型データ伝送装置に関する。

【0002】

【従来の技術】 一般的に、バッテリーで駆動する携帯電話とファイルデータ蓄積装置を一体化した機器を図 9 に示して説明する。

【0003】 音声入力回路 91 から入力した音声信号 a は、送信信号処理回路 92 に入力する。この信号処理回路 92 の出力音声信号 b は、電話回線接続回路 93 に入力する。電話回線接続回路 93 は電話回線 T e l を通じて通話相手と音声信号のやりとりを行う。電話回線接続回路 93 で受け取った通話相手の音声信号 c は、受信信号処理回路 94 に入力する。受信信号処理回路 94 の出力音声信号 d は、音声出力回路 95 に入力する。

【0004】 データファイル読み出し回路 96 は、メモリ 97 から記録されているファイルデータを読み出し、データ伝送処理回路 98 に入力する。データ伝送処理回路 98 の出力信号 e は、電話回線接続回路 93 に入力する。

【0005】 電源供給回路 99 はバッテリー 100 から各回路への電源供給を行う。バッテリー残量検出回路 101 はバッテリー 100 の残量を検出し、その結果を比較回路 102 へ供給する。比較回路 102 では、基準電圧 V r e f とを比較し、その比較結果に基づいて電源供給回路 99 と警告音発生回路 103 とを制御する。警告音発生回路 103 で発生した警告信号 f は、音声出力回路 95 に入力する。音声出力回路 95 はスピーカ S P を駆動する。

【0006】 このように構成された回路の動作について説明する。音声入力回路 91 より入力された使用者の音声信号 a に対して、送信信号処理回路 92 では電話回線 T e l で送信するために必要な処理を行う。この処理された出力音声信号 b は、電話回線接続回路 93 より電話回線 T e l を介して通話相手に送信する。

【0007】 逆に、電話回線 T e l を介して電話回線接続回路 93 で受け取った通話相手が送ってきた通話相手の伝送用に処理された音声信号 c は、受信信号処理回路 94 に入力し、音声として出力できるように処理を行う。この通話相手の音声信号 d は、音声出力回路 95 がスピーカ S P を駆動することによって相手のメッセージを聴取できる。

【0008】 データファイルを送信する場合には、データファイル読み出し回路 96 からメモリ 97 に読み出す

ファイルを指定し、ファイルデータを読み出す。読み出されたファイルデータは、データ伝送処理回路98に入力し、電話回線Te1で送信するために必要な処理を行う。この処理されたデータ信号eは、電話回線接続回路93、電話回線Te1を通じて通話相手に送信する。

【0009】バッテリーの残量検出は、バッテリー残量検出回路101で検出された検出結果Xを、比較回路102に入力し、基準電圧Vrefと比較する。基準残量 $1 < X < \text{基準残量}2$ となった場合に、警告音発生回路103から音声出力回路95へ警告信号fが出力し、スピーカSPより使用者に、なもなくバッテリーがなくなることを伝える。そして、 $X < \text{基準残量}1 < \text{基準残量}2$ の場合には、電話回線接続回路93にて回線接続を断ち、電源供給回路99から各回路への電源供給をストップする。

【0010】以上の説明したように、使用者に対して事前にバッテリー残量の低下が知られるので、通常の会話であれば、早急に終わりにして通話を終了させれば問題は無い。

【0011】しかしながら、データ伝送中の場合は、データ伝送終了までバッテリーが持てばいいが、伝送途中でバッテリーがなくなった場合、自動的に電話回線との接続が断たれ、伝送したデータ内容が不完全なものとなり、最悪伝送したデータが全く無駄になる可能性がある。この場合、データ伝送にかかった、回線使用料や時間などが無駄になるという問題がある。

【0012】

【発明が解決しようとする課題】上記システムでは、ファイルデータを伝送中にバッテリー残量がなくなり最後までファイルを伝送できないケースが発生する恐れがあり、それまで伝送にかかった時間や通信コストが無駄になるという問題点があった。

【0013】この発明は、バッテリーの残量が少なくなったときに、データ伝送を行って伝送途中でバッテリー切れのためデータ伝送が失敗し、通信コストなどを無駄にすることのない携帯型データ伝送装置を提供する。

【0014】

【課題を解決するための手段】上記した課題を解決するために、この発明の携帯型データ伝送装置では、予め伝送したいファイル容量とファイルを伝送するために必要な機器のバッテリー残量を確認し、前記バッテリー残量が、前記伝送したいファイルを伝送するために充分でない場合、使用者に警告してなることを特徴とする。

【0015】これにより、ファイルデータを伝送しようとした場合に、伝送ファイルデータを伝送しきるまでバッテリーが持つかどうかチェックして、バッテリーが持つ場合にファイル伝送を行い、持たない場合にはバッテリー交換のメッセージを出力するので、伝送途中でバッテリー切れを起こす心配がなくなる。

【0016】また、予め伝送したいファイル容量とフ

イルを伝送するために必要な機器のバッテリー残量を確認し、前記バッテリー残量が、伝送したい前記ファイルを伝送するために充分でない場合、使用者に警告を発するとともに、伝送するかどうかを選択できる選択機能を備えてなることを特徴とする。

【0017】これにより、ファイルデータを伝送しようとした場合に、伝送ファイルデータを伝送しきるまでバッテリーが持つかどうかチェックして、バッテリーが持つ場合にファイル伝送を行うが、持たない場合、その確率を表示し、使用者に伝送を実行するかどうか判断をまかせることができる。

【0018】また、複数のファイルを送信するときに、伝送したいファイルを1つ伝送することに、伝送したい前記ファイルの容量と該ファイルを伝送するのに必要な機器のバッテリー残量を予め確認し、次に伝送したい前記ファイルを伝送するために必要なバッテリー残量がない場合はメッセージを送出し、前記伝送したいファイルの伝送を停止する停止機能を備えてなることを特徴とする。

【0019】この手段により、複数のファイルデータを伝送しようとした場合に、各ファイルを伝送する度に伝送ファイルデータを伝送しきるまでバッテリーが持つかどうかチェックして、バッテリーが持つ場合にファイル伝送を行い、持たない場合にはバッテリー交換のメッセージを出力して、次のファイル伝送開始を中止するので、データファイルを伝送途中でバッテリー切れを起こす心配がなくなる。

【0020】また、複数のファイルを送信するときに、伝送したいファイルを1つ伝送することに、伝送したい前記ファイルの容量と該ファイルを伝送するのに必要な機器のバッテリー残量を予め確認し、次に伝送したい前記ファイルを伝送するのに必要なバッテリー残量がない場合はメッセージを出し、伝送したい前記ファイルの伝送を停止するとともに、前記ファイルのうち、既に伝送が終了したファイル名と未送信のファイル名がわかる情報を残す機能を備えてなることを特徴とする。この手段により、複数のファイルデータを伝送しようとして、選択した全部のファイルを伝送する前にバッテリー切れの可能性が発生したとき、ファイル伝送をやめて、未送信ファイル名を情報として記録するので、データ伝送途中でバッテリーが切れる心配がないほか、未送信データファイル名もあとでわかるので、バッテリー交換後、あらためて伝送することができる。

【0021】さらに、複数のファイルより伝送したいファイルを選択するときに、前記伝送したいファイルのトータル容量と該ファイルを伝送するのに必要な機器のバッテリー残量を確認し、確認した前記バッテリー残量から、前記伝送したいファイルが伝送可能な容量を超える場合、警告を出すかまたは、警告を発して該ファイルが選択できない機能を備えてなることを特徴とする。

【0022】この手段により、複数のファイルデータを伝送しようとしてファイル選択を行っている際、選択した全ファイルを伝送しきるまでバッテリーが持つかどうかチェックして、バッテリーが持たない場合には、最後に選択したファイル名の選択を取り消すので、使用者は今のバッテリー残量で伝送可能なファイルだけを選択することができる。これにより、選択したファイルを途中バッテリー切れを起こすことなく確実に伝送することができる。

【0023】さらにまた、予め伝送したいファイルに必要な機器のバッテリー残量を確認し、前記伝送したいファイルの伝送中に、最後まで伝送するだけのバッテリー残量がないと判断した場合、ファイル分割処理を行ってから、分割された片方のファイル伝送を終了させ、この分割したことを示す情報を残し、前記バッテリー交換後またはバッテリー充電後に、前記分割されたファイルの未伝送分のファイルを伝送してなることを特徴とする。

【0024】この手段により、ファイルデータを伝送中にファイルデータを最後まで伝送できるかどうかのバッテリー残量があるかどうかチェックして、バッテリーが持つ場合にそのままファイル伝送を行い、持たない場合にはファイルデータを分割して途中まででデータ伝送を終了し、その分割情報を保存するので、バッテリー切れにより、それまで伝送していたファイルデータを無駄にしないで済むことができる。

【0025】

【発明の実施の形態】以下、この発明の実施の形態について、図面を参照しながら詳細に説明する。図1は、この発明の第1の実施の形態を説明するためのブロック図である。図1において、マイコン部11からデータファイル記憶部12に対して制御信号aを送り、読み出すデータファイルを指定するとともに、制御信号bの不揮発性メモリ121への記録指定も行う。

【0026】データファイル記憶部12からは、制御信号aにより指定されたファイルデータcをマイコン11を介して伝送データdとしてデータ伝送処理部13に出力する。データ伝送処理部13では、マイコン11からの制御信号eを受け、入力された伝送データdに処理を行い、伝送相手側にデータを送信する。

【0027】バッテリー残量検出部14は、バッテリー15の残量を検出して、その検出情報fをマイコン11へ出力する。マイコン11では、残量検出情報fをもとに、メッセージ出力部16にメッセージ信号gを出力するほか、制御信号a、制御信号eにてデータファイル記憶部12、データ伝送処理部13を制御する。

【0028】図2のフローチャートを用いながら、図1の動作についてさらに詳しく説明する。

【0029】まず、マイコン11にて使用者から伝送するデータファイルを選択してもらう。マイコン11では選択されたファイルの容量を調べるため、データファイ

ル記憶部12に制御信号aを出力する。データファイル記憶部12では、選択された伝送するファイルの容量データをファイルデータcとしてマイコン11に出力する。マイコン11では、このファイル容量データとデータ伝送処理部13でのファイル伝送速度とから、ファイルを伝送し終わるのに必要な時間を算出する。バッテリー残量検出部14は、バッテリー15のバッテリー残量を検出し、マイコン11に検出情報fを出力する。マイコン11では、バッテリー残量検出部14の残量で算出したファイル伝送必要時間の間、バッテリー15が持つかについての判断を行う。

【0030】ファイル伝送終了までバッテリー15が持つと判断した場合、マイコン11はデータ伝送処理部13に、伝送開始の指示を制御信号eにて行うとともに、データファイル記憶部12にファイルデータの読み出し指示を出力する。データファイル記憶部12から読み出したファイルデータcを、データ伝送処理部13に伝送データとして出力する。

【0031】逆に、ファイル伝送終了まで持たないと判断した場合、マイコン11はメッセージ出力部16に、「バッテリー残量が少ないので、バッテリーを交換・充電してから伝送してください」というような内容のメッセージ信号gを出力する。

【0032】この実施の形態では、ファイルデータを伝送しようとした場合に、伝送ファイルデータの伝送を終了するまで、バッテリーの容量が持つかどうかチェックして、バッテリーが持つ場合にファイル伝送を行い、持たない場合にはバッテリー交換のメッセージを出力するので、伝送途中にバッテリー切れを起こす心配がなくなる。

【0033】次に、この発明の第2の実施の形態について、図1と図3のフローチャートを用いて説明する。この実施の形態のフローチャートと図2のフローチャートの「伝送中バッテリーは持つか」の判断まで同じであり、ここでの説明は省略する。また、マイコンでの判断において、伝送必要時間とバッテリー残量から伝送終了までバッテリー残量が持つ可能性の確率を出す。例えば、持つかどうか微妙なときは50%、絶対に持ちそうにないときは5%などとする。

【0034】ファイル伝送終了まで確実にバッテリーが持つと判断した場合は、第1の実施の形態と同様でファイルデータの伝送を開始する。

【0035】ファイル伝送終了まで持たないと判断した場合、マイコン11はメッセージ出力部16に「バッテリー残量が少ないので、途中でバッテリー切れを起こす可能性があります。伝送途中でバッテリー切れを起こす可能性は**%です。伝送を開始しますか？」というような内容のメッセージ信号gを出力し、伝送を実施するかどうか使用者の判断に任せる。ユーザーが伝送を開始したいと選択した場合には、マイコン11はデータ伝送

処理部 13 に伝送開始の指示を制御信号 e にて行うとともに、データファイル記憶部 12 にファイルデータの読み出し指示を出力する。データファイル記憶部 12 から読み出したファイルデータ c をデータ伝送処理部 13 に伝送データ d として出力する。逆に、伝送しないと選択した場合は、そのまま終了する。

【0036】このように、この実施の形態では、ファイルデータを伝送しようとした場合に、伝送ファイルデータを伝送しきるまでバッテリーが持つかどうかチェックして、バッテリーが持つ場合にファイル伝送を行うが、持たない場合、その確率を表示し、使用者に伝送を実行するかどうか判断をまかせることができる。

【0037】図 1 と図 4 のフローチャートを用いて、この発明の第 3 の実施の形態について説明する。

【0038】まず、マイコン 11 にて使用者から伝送するデータファイルをすべて選択する。マイコン 11 では、最初に伝送を開始するファイルの容量を調べるため、データファイル記憶部 12 に制御信号 a を出力する。データファイル記憶部 12 では、選択された伝送するファイルの容量データをファイルデータ c としてマイコン部 11 に出力する。マイコン 11 ではこのファイル容量データとデータ伝送処理部 13 でのファイル伝送速度とからファイルを伝送し、終わるのに必要な時間を算出する。バッテリー残量検出部 14 は、バッテリー 15 のバッテリー残量を検出し、マイコン 11 に残量情報 f を出力する。マイコン 11 ではバッテリー残量情報 f の残量で算出したファイル伝送必要時間の間、バッテリー 15 が持つかについて判断する。

【0039】ファイル伝送終了までバッテリー 15 が持つと判断した場合、マイコン 11 はデータ伝送処理部 13 に伝送開始の指示を制御信号 e にて行うとともに、データファイル記憶部 12 にファイルデータの読み出し指示を出力する。データファイル記憶部 12 から読み出したファイルデータ c を、データ伝送処理部 13 に伝送データ d として出力する。

【0040】はじめのデータファイル伝送を終了後、同様に次に伝送を開始するファイルの容量を調べ、バッテリー 15 の残量をチェックして、バッテリー 15 が持つと判断したならファイル伝送を開始する。上記のサイクルを選択したファイルをすべて伝送するまでおこなう。

【0041】途中、ファイル伝送終了までバッテリーが持たないと判断した場合、マイコン 11 は、メッセージ出力部 16 に「バッテリー残量が少ないので、選択したファイルのうち、***、+++、○○○の伝送を中止します。バッテリーを交換・充電してから伝送してください」のような内容のメッセージ信号 g を出力して終了する。

【0042】このように、複数のファイルデータを伝送しようとした場合に、各ファイルを伝送する度に伝送ファイルデータを伝送しきるまでバッテリーが持つかどうか

かチェックして、バッテリーが持つ場合にファイル伝送を行い、持たない場合にはバッテリー交換のメッセージを出力して、次のファイル伝送開始を中止するので、データファイルを伝送途中でバッテリー切れを起こす心配がなくなる。

【0043】図 1 と図 5 のフローチャートを用いて、この発明の第 4 の実施の形態について説明する。この実施の形態の図 5 のフローチャートは、図 4 のフローチャートの「伝送していないファイル名を表示」の処理まで同じであり、ここでは以降の処理について説明する。

【0044】マイコン 11 は伝送していないファイル名をメッセージ出力部 16 に出力する。次に、この伝送していないファイル名をデータファイル記憶部 12 に制御信号 b として記録するように出力する。バッテリー交換を行った後、このデータファイル記憶部 12 に記録された制御信号に基づいて、残りのデータファイルを伝送する。

【0045】この実施の形態では、複数のファイルデータを伝送しようとして、選択した全部のファイルを伝送する前にバッテリー切れの可能性が発生したとき、ファイル伝送をやめて、未伝送ファイル名を情報として記録するので、データ伝送途中でバッテリーが切れる心配がないほか、未伝送データファイル名もあとでわかるので、バッテリー交換後、あらためて伝送することができる。

【0046】次に、図 1 と図 6 のフローチャートとともに、この発明の第 5 の実施の形態について説明する。

【0047】まず、バッテリー残量検出部 14 は、バッテリー 15 バッテリー残量を検出し、マイコン 11 に残量情報 f を出力する。マイコン 11 では、このバッテリー 15 の残量情報 f とデータ伝送処理部 13 でのファイル伝送速度とから、伝送可能な最大ファイル容量を算出する。マイコン部 11 にて使用者から伝送するデータファイルを選択してもらい、伝送ファイルリストに選択したファイル名を加える。

【0048】次に、マイコン 11 では作成した伝送ファイルリストのトータルファイルの容量を調べるため、データファイル記憶部 12 に制御信号 a を出力する。データファイル記憶部 12 では、選択された伝送するファイルの全容量データをファイルデータ c としてマイコン 11 に出力する。マイコン 11 では、算出した伝送可能な最大ファイル容量と伝送するファイルの全容量データを表すファイルデータ c とを比較し、伝送可能な最大ファイル容量の方が大きい場合には伝送中バッテリーは持つとして、次の伝送するデータファイルを使用者に選択してもらい、ファイル選択終了まで上記内容を繰り返す。

【0049】伝送するファイルの全容量の方が大きい場合、選択したすべてのファイルデータを伝送するまでバッテリーは持たないと判断し、マイコン 11 はメッセージ出力部 16 に「バッテリー残量が少ないので、今、選

択したファイルは伝送できません。」のような内容のメッセージ信号 g を出力して終了する。そして、最後に選んだファイル名を伝送ファイルリストから削除する。

【0050】ファイル選択終了後、マイコン 11 はデータ伝送処理部 13 に伝送開始の指示を制御信号 e にて行うとともに、伝送ファイルリストにしたがって、順次データファイル記憶部 12 にファイルデータの読み出し指示を出力する。データファイル記憶部 12 から読み出したファイルデータ c をデータ伝送処理部 13 に伝送データ d として出力する。

【0051】このように、複数のファイルデータを伝送しようとしてファイル選択を行っている際、選択した全ファイルを伝送しきるまでバッテリーが持つかどうかチェックして、バッテリーが持たない場合には、最後に選択したファイル名の選択を取り消すので、使用者は今のバッテリー残量で伝送可能なファイルだけを選択することができる。これにより、選択したファイルを途中バッテリー切れを起こすことなく確実に伝送することができる。

【0052】次に、図 1 と図 7 のフローチャートとともに、この発明の第 6 の実施の形態について説明する。

【0053】マイコン 11 にて使用者から伝送するデータファイルを選択する。マイコン 11 はデータ伝送処理部 13 に伝送開始の指示を制御信号 e にて行うとともに、データファイル記憶部 12 にファイルデータの読み出し指示を出力する。データファイル記憶部 12 から読み出したファイルデータ c をデータ伝送処理部 13 に伝送データ d として出力する。

【0054】バッテリー残量検出部 14 は、バッテリー 15 のバッテリー残量を検出し、マイコン 11 に残量情報 f として出力する。マイコン 11 ではこのバッテリー残量情報 f とデータ伝送処理部 13 でのファイル伝送速度とから伝送可能な最大ファイル容量を算出する。

【0055】マイコン 11 では伝送中のファイルの未伝送容量を調べ、算出した最大ファイル容量と未伝送容量とを比較する。比較の結果、最大ファイル容量の方が大きい場合にはファイル伝送中バッテリーは持つと判断し、伝送を続行する。

【0056】逆に、未伝送ファイル容量の方が大きい場合、伝送中のファイルデータを最後まで伝送できないと判断し、未伝送データの部分でファイル分割を行い、分割した部分でファイル伝送を終了させるようにする。次にマイコン 11 は、この分割情報をデータファイル記憶部 12 の不揮発性メモリ 121 に記録する。

【0057】以上説明したように、ファイルデータを伝送中にファイルデータを最後まで伝送できるかどうかのバッテリー残量があるかどうかチェックして、バッテリーが持つ場合にそのままファイル伝送を行い、持たない場合にはファイルデータを分割して途中まででデータ伝送を終了し、その分割情報を保存するので、バッテリー

切れにより、それまで伝送していたファイルデータを無駄にしないで済むことができる。

【0058】さらに、図 1 と図 8 のフローチャートを用いて、この発明の第 7 の実施の形態について説明する。

【0059】電源投入直後に、マイコン 11 はデータファイル記憶部 12 に対し、分割情報が記録されているかどうか検索する。その結果、分割情報が記録されていた場合、使用者に対して、分割した残りのファイルデータを伝送するかどうか聞くため、メッセージ出力手段 211 に「分割ファイルがあります。伝送しますか？」というような内容のメッセージ信号 g を出力する。使用者が伝送するを選択した場合、マイコン 11 は分割情報をデータファイル記憶部 12 から読み出し、その情報にしたがって、伝送するファイルを指定し、分割されたデータからの伝送を行う。データの伝送終了後、相手側に分割したデータファイルをもとの 1 つに戻すために必要な情報を伝送し、最後にデータファイル記憶部 12 に記録されていた分割情報を削除する。

【0060】この実施の形態では、分割された残りのデータを、自動的に送信できるとともに、データファイル記憶部 12 に記録されていた分割情報の削除を行うことができる。

【0061】以上説明したように、この発明ではファイルを伝送するときに、予めバッテリーの残量チェックを行うことにより、ファイルデータ伝送途中でバッテリー切れを起こして、それまで伝送していたデータや伝送にかかっていた回線使用料や、時間を無駄にすることがなくなる。

【0062】

【発明の効果】以上説明したようにこの発明によれば、ファイル伝送を行うときに、バッテリー残量チェックを行い、データファイル容量を伝送できる分のバッテリーがあると判断した場合に伝送を行うので、データ伝送の途中でバッテリー切れのためデータ伝送が失敗を防止できる。

【図面の簡単な説明】

【図 1】この発明の第 1 の実施の形態を説明するためのブロック図。

【図 2】図 1 の動作を説明するためのフローチャート。

【図 3】この発明の第 2 の実施の形態を説明するためのフローチャート。

【図 4】この発明の第 3 の実施の形態を説明するためのフローチャート。

【図 5】この発明の第 4 の実施の形態を説明するためのフローチャート。

【図 6】この発明の第 5 の実施の形態を説明するためのフローチャート。

【図 7】この発明の第 6 の実施の形態を説明するためのフローチャート。

【図 8】この発明の第 7 の実施の形態を説明するための

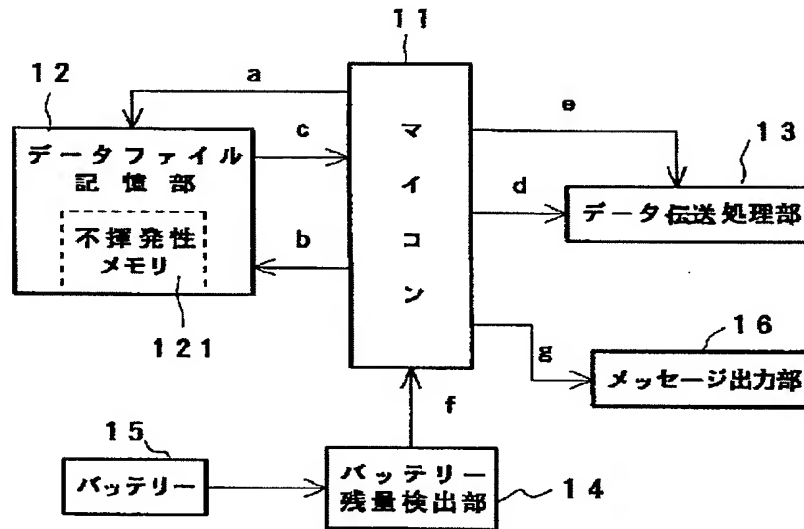
フローチャート。

【図 9】従来のバッテリーで駆動する携帯電話とファイルデータ蓄積装置を一体化したシステムについて説明するためのブロック図。

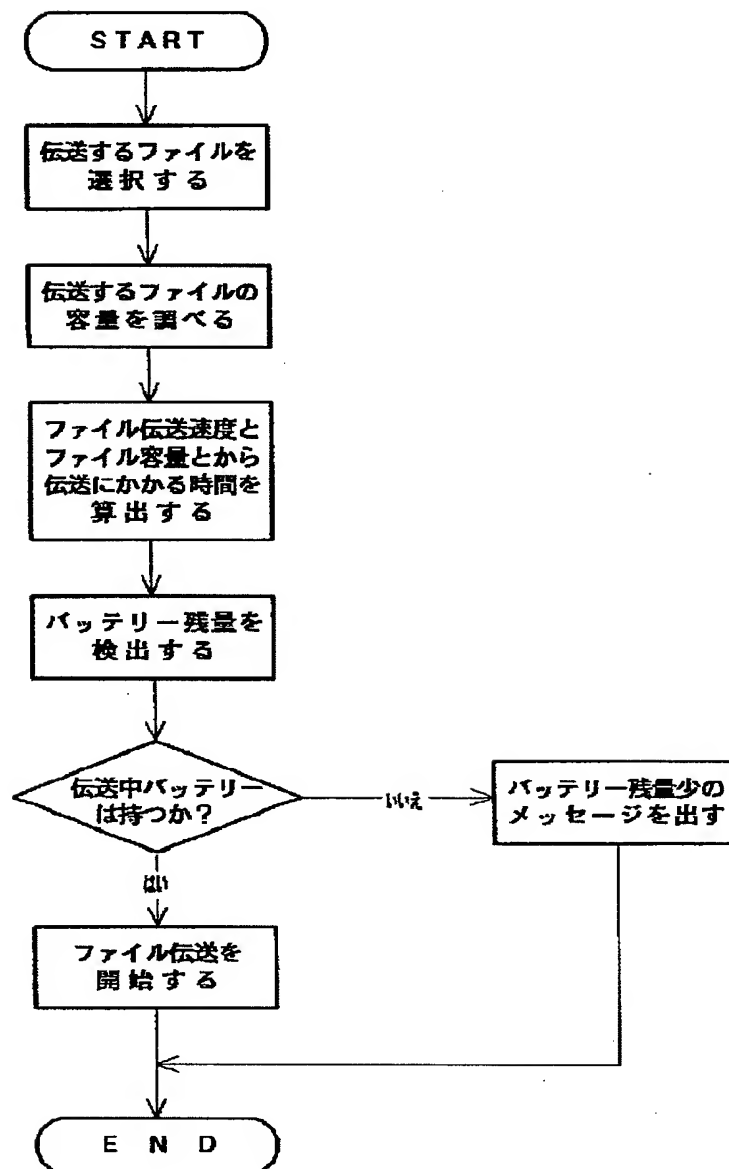
【符号の説明】

11…マイコン、12…データファイル記憶部、121…不揮発性メモリ、13…データ伝送処理部、14…バッテリー残量検出部、15…バッテリー、16…メッセージ出力部。

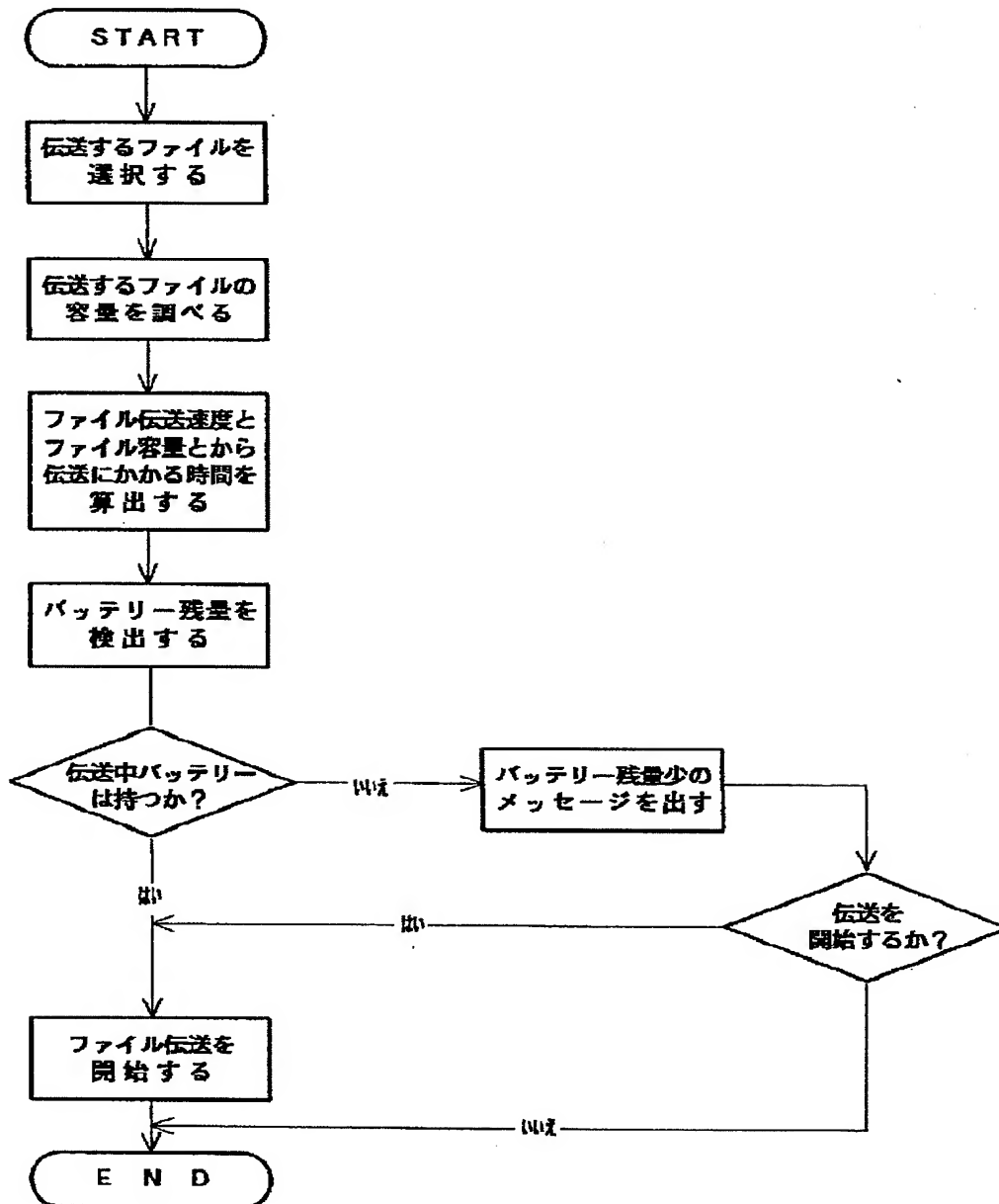
【図 1】



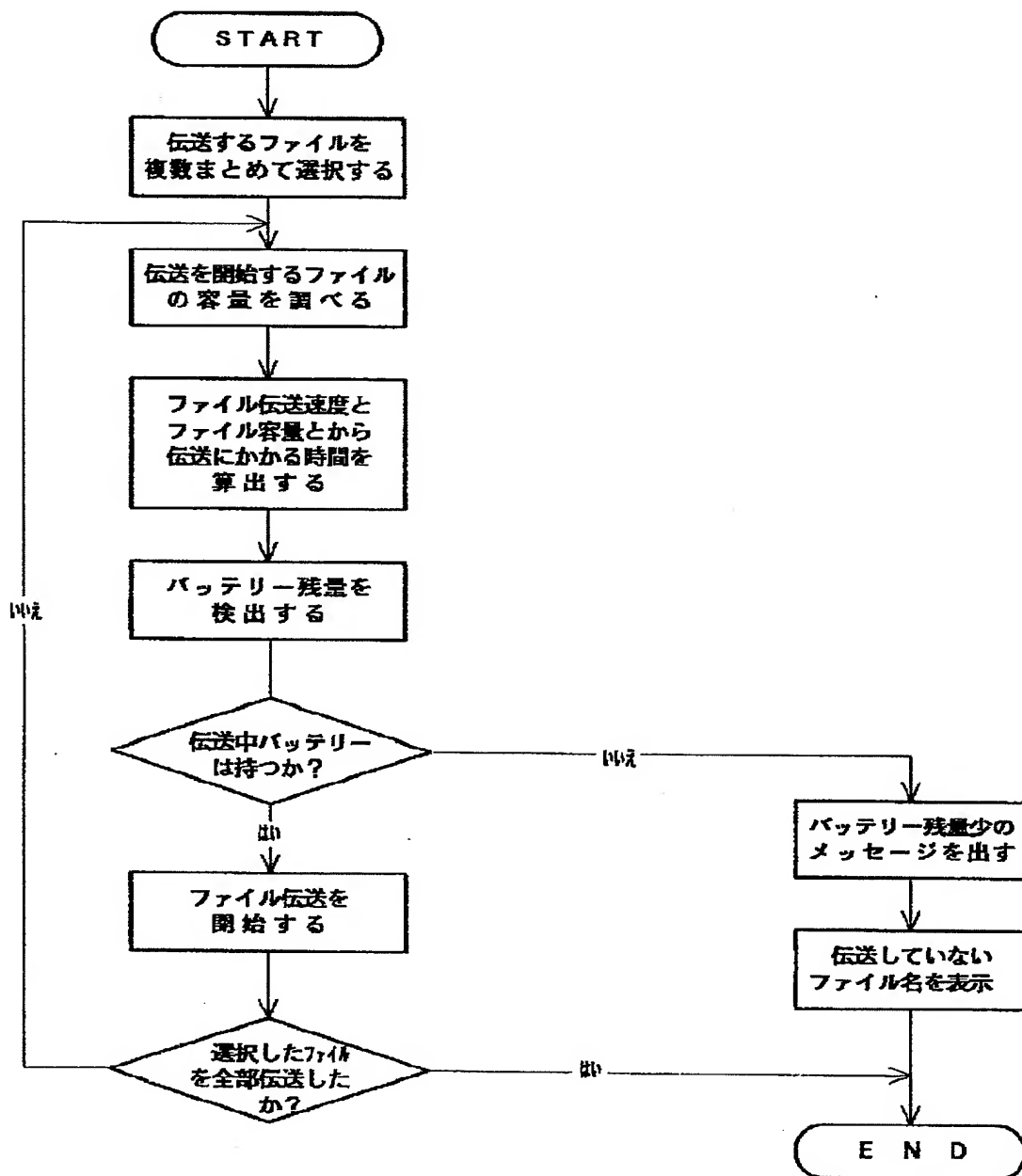
【図2】



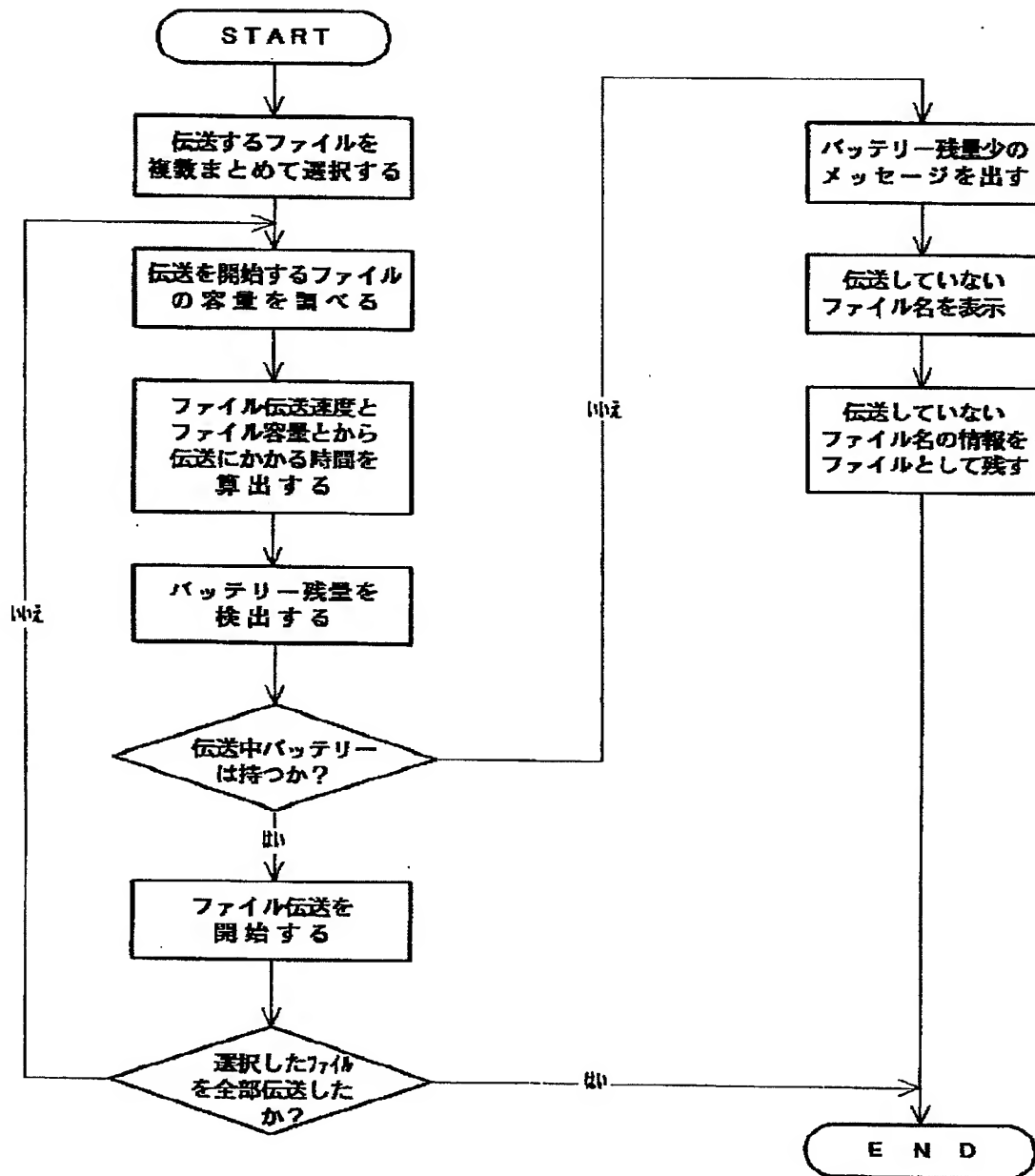
【図3】



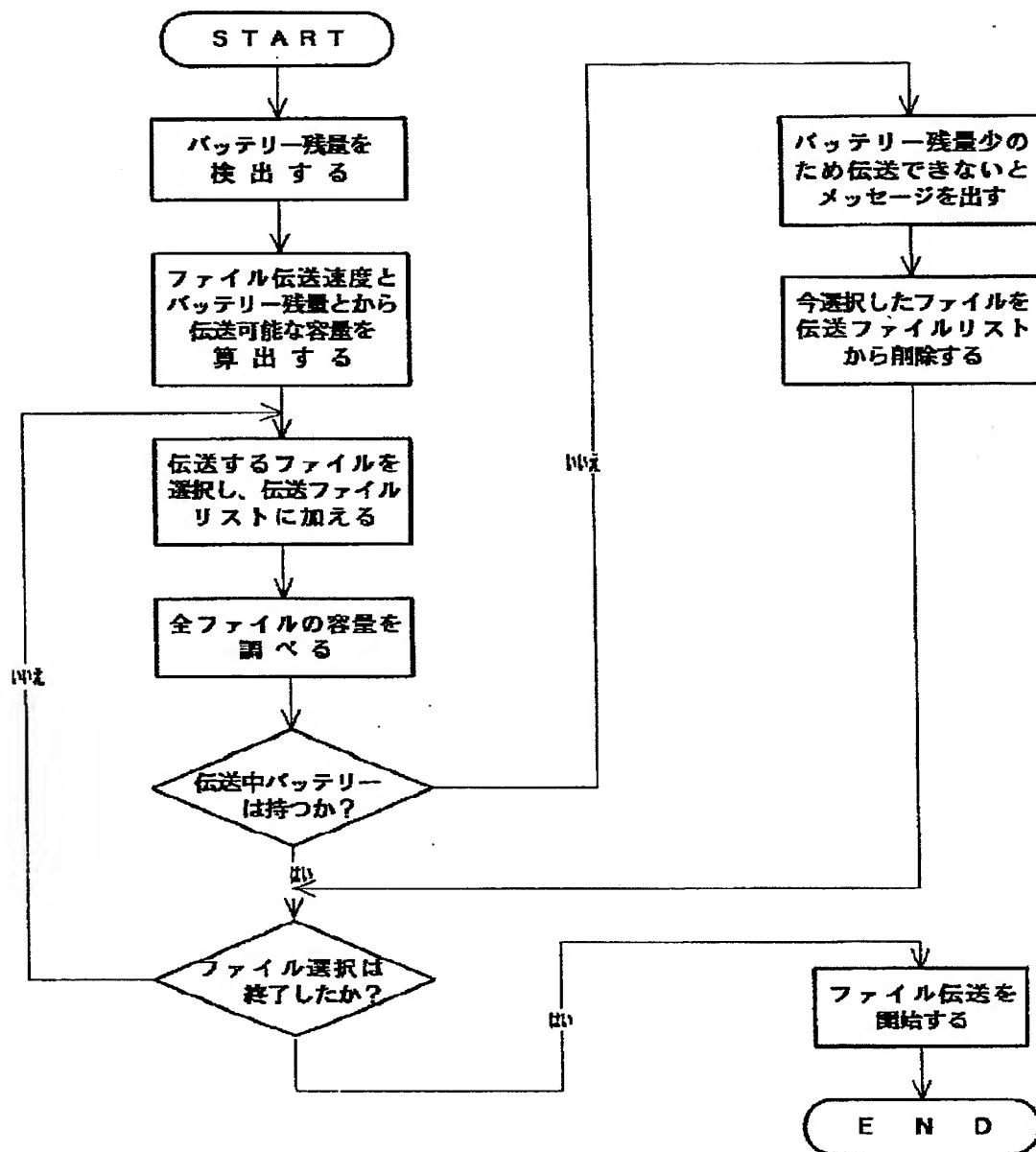
【図4】



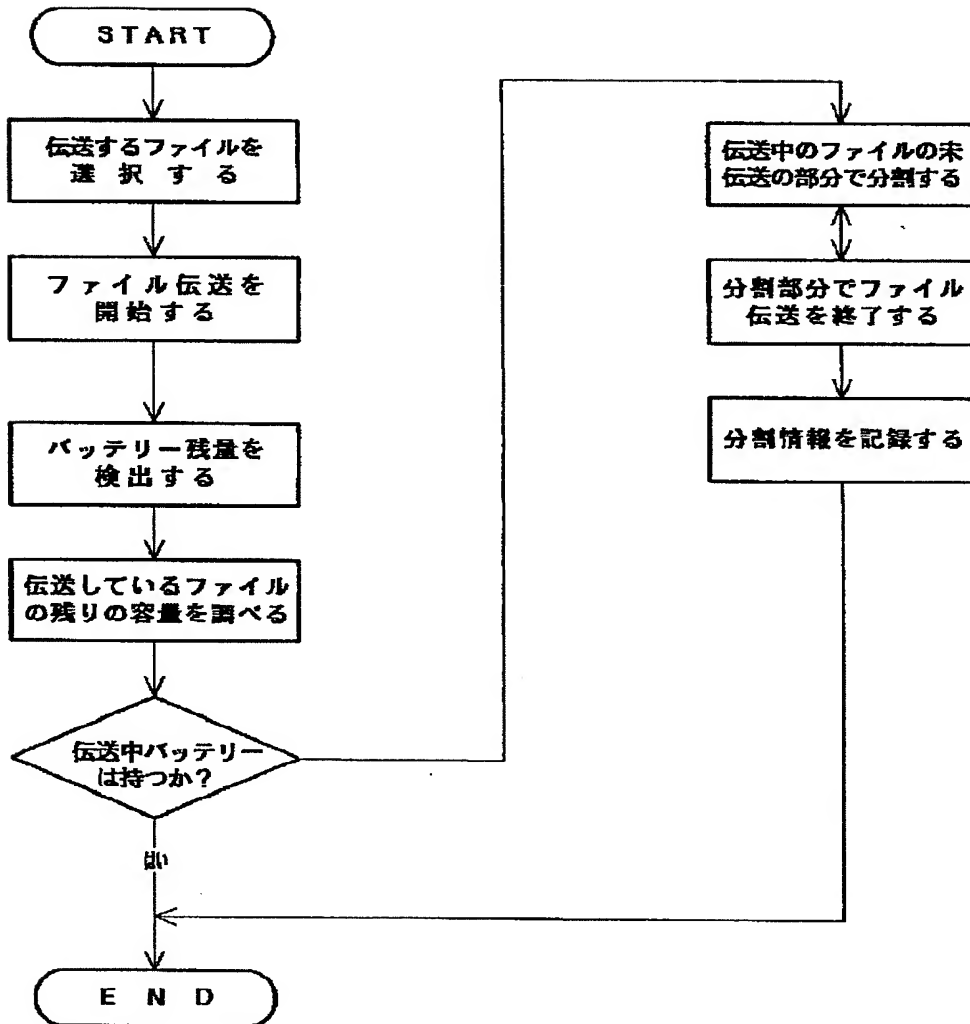
【図5】



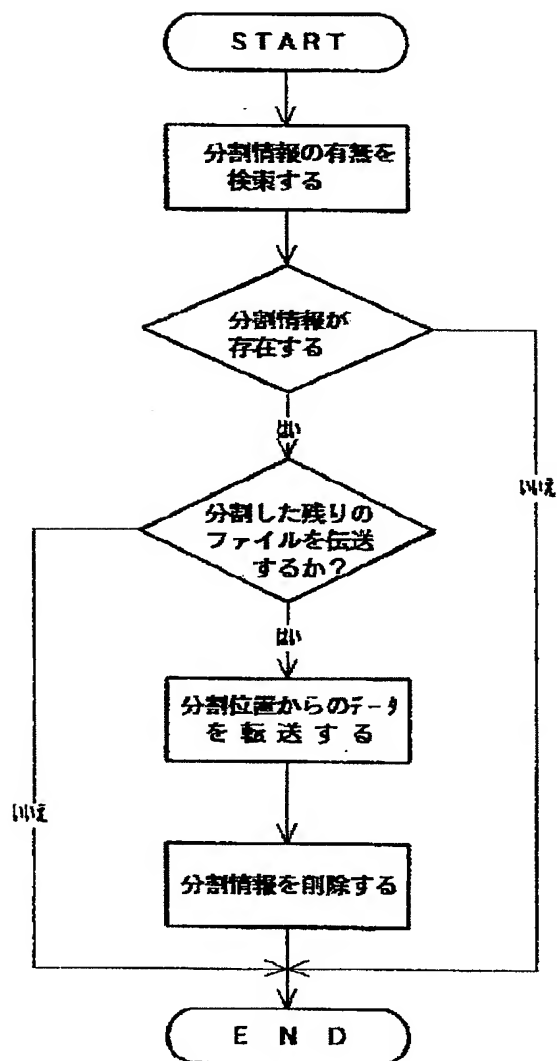
【図6】



【図7】



【図8】



【図 9】

